OP 18.10 Fetal gastric size measurements in diagnosing GI abnormalities
V. Kashyap¹, A. Khurana², N. Kashyap¹, S. Verma³ 1.Dr Kashyap's Diagnostics, Delhi, India; 2.The Ultrasound Lab, New Delhi, India; 3. Fortis hospital, Delhi, India

Objectives: The diagnosis of oesophageal atresia with or without tracheal fistula or duodenal atresia in a foetus is a challenge. The aim of this observational study is to construct ultrasound indices of fetal gastric size for prenatal detection of congenital digestive tract obstruction.

Methods: A total of 1686 normal singleton pregnancies and 11 fetuses with digestive tract obstruction were examined between 18 and 22 weeks of gestation and their gastric measurements were recorded. The transverse plane of fetal abdomen which included the pylorus and the largest stomach area was used and the center of the gastric corpus used for transverse and anteroposterior dimensions and area. Pyloric wall thickness was also measured.

Results: The fetal gastric area and largest gastric dimension significantly correlated with gestational age. Gastric volume (ellipsoid model) was not significantly different between the 2 measurements for the subjects with two sets of measurements during ultrasound. A 3-dimensional measurement is complicated and time-consuming compared with 2-dimensional measurements. We have reported the usefulness of the measurement of the fetal gastric area with ultrasound to assess fetal gastric emptying. In the present study, fetal gastric size with a two-dimensional method closely correlates with that of 3-dimensional method. The gastric area ratio was below the 95% confidence intervals for the predicted values in all four fetuses with esophageal atresia, and exceeded the 95% confidence intervals in five of the seven fetuses with duodenal atresia or intestinal tract obstruction. However, the standard deviation of the gastric measurements increases markedly with advancing gestational age. Therefore, these measurements limit the ability to diagnose abnormalities of stomach size in cases of congenital digestive tract obstruction, particularly in mid to late gestation.

Conclusion: Fetal gastric area can be measured easily and correlates closely with Ultrasound determined gastric volume measurements. Fetal gastric area ratio is useful in the assessment of digestive tract anomalies.